

# Shop Manual DL250-3 Wheel Loader

Serial Number 10001 and Up

DOOSAN and the DOOSAN logo are registered trademarks of DOOSAN Corporation in the United States and various other countries around the world.



950106-00985E July 2012

## **Table of Contents**

| Safety   |          |
|--|----------|
| Wheel Loader Safety                            | SP002397 |
| One sifications                                |          |
| Specifications                                 |          |
| Specification for DL250-3                      | SP002778 |
| General Maintenance                            |          |
| General Maintenance Instructions               | SP002454 |
| Standard Torques                               | SP002404 |
| Drivetrain                                     |          |
| Transmission and Torque Converter (ZF 4WG-190) | SP002779 |
| Transmission Error Codes (ZF)                  | SP002423 |
| Axle (ZF-MT-L 3085 II)                         | SP002780 |
| Driveshaft                                     | SP002663 |
| Brake  |          |
| Service Brake                                  | SP002781 |
| Brake Supply Valve                             | SP002427 |
| Charging Block                                 | SP002428 |
| Parking Brake                                  | SP002429 |
| Brake Pedal Valve                              | SP002430 |
| Accumulator                                    | SP002782 |
| Steering                                       |          |
| Power Steering System                          | SP002599 |
| Priority Valve                                 | SP002600 |
| Emergency Steering                             | SP002601 |

#### **Frame**

| Articulation Center                      | SP002783        |
|--|-----------------|
| Counterweight                            | SP002784        |
| Tank                                     |                 |
| Tank                                     |                 |
| Oil Tank                                 | SP002664        |
| Fuel Tank                                | SP002785        |
| Hydraulics                               |                 |
| Main Pump                                | SP002440        |
| Main Control Valve                       | SP002786        |
| Load Isolation System                    | SP002787        |
| Cooling System                           | SP002788        |
| Pilot System                             | SP002445        |
| Hydraulic Schematic DL250-3              | SP002789        |
| Electrical System                        |                 |
| Air Conditioner                          | SP002447        |
| Electrical System                        | SP002662        |
| Electrical Schematic DL200-3 / DL220-3 / | DL250-3SP002666 |

## **Wheel Loader Safety**

**Edition 3** 

**Wheel Loader Safety** SP002397

## **Table of Contents**

### **Wheel Loader Safety**

| Safety Instructions           | 5  |
|-------------------------------|----|
| Applicable Models             | 5  |
| Safety Messages               | 6  |
| Safety Decals                 | 7  |
| General                       | 8  |
| Transportation                | 19 |
| Operation                     | 21 |
| Maintenance                   | 39 |
| Environment and Circumstances | 54 |

#### **SAFETY INSTRUCTIONS**



### **WARNING**

#### **AVOID DEATH OR SERIOUS INJURY**

Instructions are necessary before operating or servicing machine. Read and understand the Operation and Maintenance Manual and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments repairs or service. Untrained operators and failure to follow instructions can cause death or serious injury.

#### **APPLICABLE MODELS**

The contents of this section apply to the following models and serial number ranges.

| MODEL   | SERIAL NUMBER RANGE |
|---------|---------------------|
| DL200-3 | 10001 and Up        |
| DL220-3 | 10001 and Up        |
| DL250-3 | 10001 and Up        |

Wheel Loader Safety SP002397

#### SAFETY MESSAGES

Safety messages and safety decals included in this manual and on the machine provide instructions how to operate, service and maintain the machine. Safety messages and safety decals indicate potential hazards and describe safety precautions required to avoid hazards. Operator and maintenance personnel should read and understand these safety messages and decals before beginning operation or maintenance.



## SAFETY ALERT SYMBOL



Be Prepared - Get to Know All Operating and Safety Instructions.

This is a Safety Alert Symbol. Wherever it appears in this manual or on safety decals on the machine, you must be alert to the potential for personal injury or accidents. Always observe safety precautions and follow recommended procedures.

#### **Signal Words**

The signal words "DANGER", "WARNING", "CAUTION" are used throughout safety messages and safety decals in this manual or on the machine. They indicate an existence of, and the relative seriousness of a hazard. All three indicate that a safety risk is involved. Observe the precautions indicated whenever a Safety Alert Symbol is present, no matter which signal word appears next to it.



#### **DANGER**

DANGER - This signal word is used on safety messages and safety labels and indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



#### **WARNING**

WARNING - This signal word is used on safety messages and safety labels and indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



#### **CAUTION**

CAUTION - This signal word is used on safety messages and safety labels and indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

#### **Other Signal Words**

In addition to safety signal words, the following signal words are used to indicate proper and effective use of machine.

#### **IMPORTANT**

This signal word identifies procedures which must be followed to avoid damage to machine.

The word "NOTE" identifies information for effective NOTE: use.

#### **SAFETY DECALS**

Location of safety labels (decals) can vary from unit to unit.

Refer to appropriate Operation and Maintenance Manual, and parts manual for your unit.

Always replace damaged or faded decals.

**Wheel Loader Safety** SP002397

#### **GENERAL**

#### Safe Operation is Operator's Responsibility

Only trained and authorized personnel should operate and maintain the machine.

Follow all safety rules, regulations and instructions when operating or performing maintenance on machine.

- Do not operate machine if you are under the influence of drugs or alcohol. An operator who is taking prescription drugs must get medical advice to determine if he or she can safely operate the machine.
- When working with other personnel on a work site, be sure that all personnel know the nature of work and understand all hand signals that are to be used.
- Be sure that all guards and shields are installed in their proper location. Have guards and shields repaired or replaced immediately if damaged.
- Be sure that you understand the use and maintenance of all safety features such as pilot cutoff switch and seat belt. Use them always.
- Never remove, modify or disable any safety features.
  Always keep them in good operating condition.
- Always check for and know the location of underground and overhead utility lines before working.
- Failure to use and maintain safety features according to instructions in this manual, Safety Manual and Shop Manual can result in death or serious injury.

#### **Know Your Machine**

Know how to operate your machine. Know the purpose of all controls, gauges, signals, indicators and monitor displays. Know the rated load capacity, speed range, braking and steering characteristics, turning radius and operating clearances. Keep in mind that rain, snow, ice, loose gravel, soft ground, slopes etc., can change operating capabilities of your machine.

#### **Proper Work Tools and Attachments**

Only use work tools and attachments that are recommended by DOOSAN for use on DOOSAN machines. When installing and using optional attachments, read instruction manual for attachment, and general information related to attachments in this manual. Because DOOSAN cannot anticipate, identify or test all attachments that owners may want to install on their machines, contact DOOSAN for written authorization and approval of attachments, and their compatibility with optional kits.



Our support email: ebooklibonline@outlook.com